Programmable Linear-in-dB or Linear Bias Current Source and Methods to Implement Current Reduction in a PA Driver with Built-In Current Steering VGA

ABSTRACT OF THE DISCLOSURE

Programmable linear-in-dB or linear bias current source with respect to an input voltage is provided. The linear-in-dB or linear bias current may be clipped at a minimum current level, a maximum current level, or a combination thereof. Preferably, the minimum and maximum current levels are determined by the use of one or more constant current sources. The constant current sources limit the amount of voltage applied to the gates of one or more transistors, which in turn control the output current. The use of the circuit may be used to generate linear or reverse-linear current levels with respect to an input voltage. The output of the current generator may be used as an input to a power-amplifier driver, for example.